

Abstract

A capacitor comprising an aluminum anode and a dielectric layer comprising phosphate doped aluminum oxide and process for making the capacitor. Furthermore, the capacitor is formed by the process of: forming an aluminum plate; pre-hydrating the aluminum; contacting the plate with an anodizing solution comprising glycerine, 0.1 to 1.0%, by weight, water and 0.01 to 0.5%, by weight, orthophosphate; applying a voltage to the aluminum plate and determining an initial current; maintaining the first voltage until a first measured current is no more than 50% of the initial current; increasing the voltage and redetermining the initial current; maintaining the increased voltage until a second measured current is no more than 50% of the redetermined initial current, and continuing the increasing of the voltage and maintaining the increased voltage until a final voltage is achieved.